



EDWARD G. CONNETTE
PRESIDENT, INTERNATIONAL RAILWAY COMPANY

BRILL MAGAZINE

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Vol. VII

JANUARY, 1913

No. 1

EDWARD G. CONNETTE...

EDWARD G. CONNETTE, president of the International Railway Company, Buffalo, N. Y., was born at Austin, Ind., December 29th, 1864. In 1890, after several years of steam railroad experience with the Pennsylvania and Louisville & Nashville Railroads, he entered the electric railway field as superintendent of the Nashville Street Railway Company, and after one year was appointed its general manager. In 1897 he became chief engineer of the Cumberland Electric Light & Power Company in addition to his other position, and three years later resigned both to become vice-president of the Syracuse Rapid Transit Railway Company, which position he retained till 1905, when he became general manager of the Worcester Consolidated Street Railway Company and its subsidiary lines. He was appointed transportation engineer of the Public Service Commission of New York, First District, in 1909, and, in addition to having jurisdiction over the New York subway question and grade-crossing elimination in Greater New York, acted largely in an advisory capacity for the commission in corporate matters. This post included full charge of the inspection and equipment bureaus, which pass on cars and other electric railway equipment for New York City, and of the accident bureau of the commission's laboratory for testing meters. His resignation from that position preceded his election as vice-president of the International Railway in May of last year, and his elevation to the presidency of the system, following a general financial reorganization, has just been announced. The lines under his supervision include the street and interurban roads serving Buffalo, Niagara Falls and Lockport, N.Y. Mr. Connette has been active in electric railway association affairs, and during 1897-8 served as third vice-president of the American Street Railway Association, and from 1903 to 1904 as president of the Street Railway Association of the State of New York.

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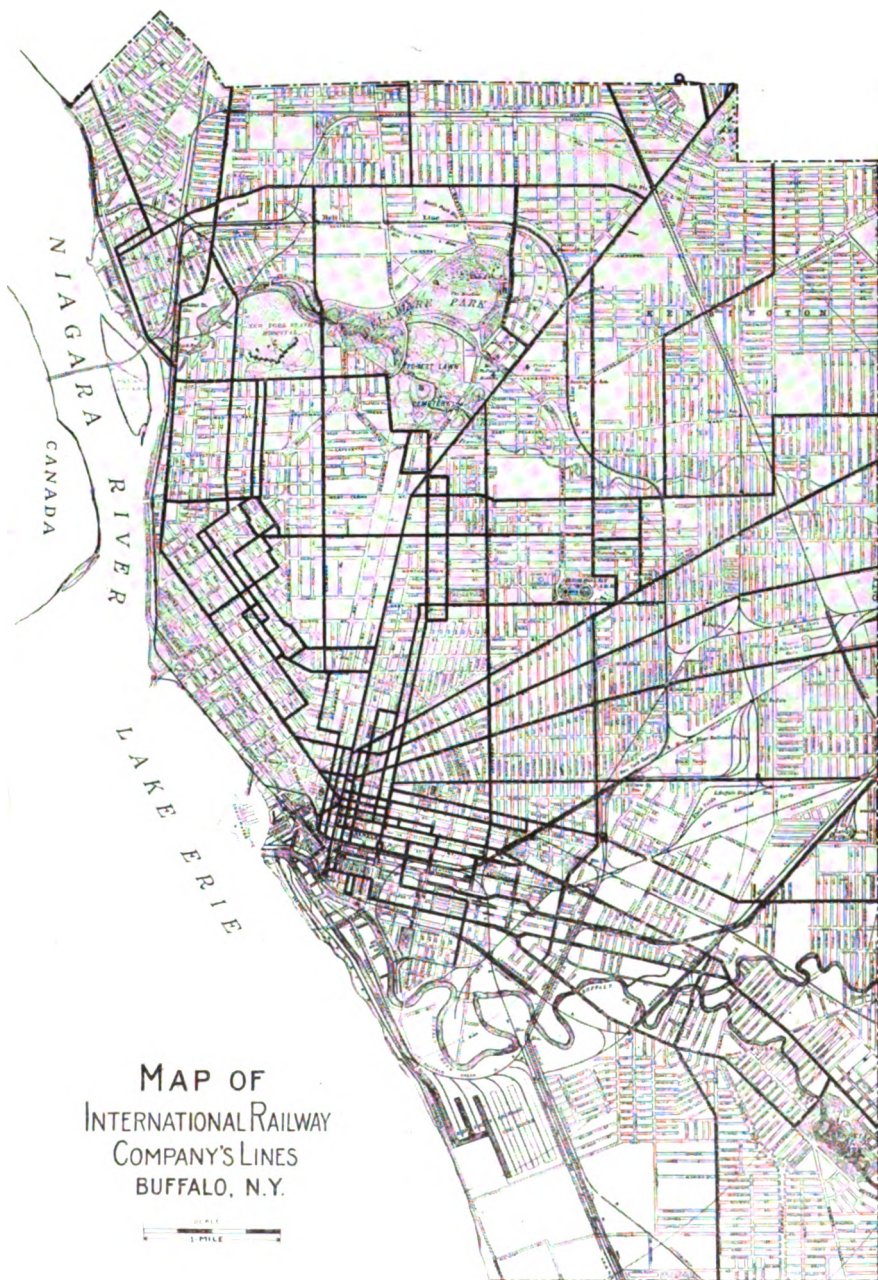
CONDITIONS WHICH GOVERN THE TYPE OF CAR FOR CITY SERVICE

BUFFALO, NEW YORK *

BUFFALO, the second city of the Empire State, is situated on the eastern shore of Lake Erie and the east bank of the Niagara River, 22 miles south of Niagara Falls. Its position, almost midway between New York, Boston and Chicago and at the eastern terminus of the bulk of marine traffic on the Great Lakes, together with its comprehensive railroad connections, have been the prime factors in its development as one of the greatest traffic interchange and industrial centers in America. Buffalo is virtually the eastern limit of the rich middle west, and is connected with every part of that large territory, as well as with all of Canada and every other portion of the United States, by 15 steam railroad and terminal companies. It is an important interurban center, with connections to the north, east, west and southwest, and the starting point of a Great Lakes marine traffic that approximates 5,000,000 tons per annum, reaching all important lake cities. Its significance as an interchange and commercial center is exemplified by the 500 miles of steam railroad tracks within the city limits, a waterfront 20 miles in length, of which 8 or 10 miles are docks and piers, and by the receipt of 200,000,000 bushels of grain in 1906; 100,000,000 barrels of flour and 10,000,000 head of cattle; a lumber trade of 200,000,000 feet; the handling of about 15,000,000 pounds of fish, and an enormous coal and iron tonnage every year. It is also an important Canadian frontier port, with imports amounting to \$6,708,919, and \$26,192,563 in exports, in 1908.

As a manufacturing center it is eclipsed, in the state, only by New York. In 1900 the value of its manufactures was

* The forty-ninth article of this series.



\$122,230,061, and in 1905 the factory value, alone, of its products was \$147,377,873. Buffalo produces principally meats, refined oil, soap and candles, flour and grist milling, malt liquors, lumber, commercial iron and steel, castings and machinery, and clothing.

In 1820 the city had 2000 inhabitants, and it was not



BUFFALO TRAFFIC CONDITIONS AND CARS. Main and Seneca Streets, heaviest traffic point on system. During rush hours, from 6 to 9 A.M. and 5 to 6.30 P.M., cars pass every $18\frac{2}{3}$ seconds. Important intersection in through-routing

until the opening of the Erie Canal, in 1825, that the development bringing its population to 423,715 in 1910, was given impetus. The growth of the city, politically and commercially, has been rapid and consistent and in nowise restricted, for the comparatively level character of the surrounding country allowed it to spread as widely as necessary. It was a natural consequence of such an environment that the business section should be near the lake shore, where maritime activity was

to become so great. With the growth of the city the railroad facilities were naturally increased; the enormous freight yards became a part of Buffalo to the extent of thousands of acres around and in the city, and with their many lines encircled it completely.

The large available territory permitted wide, shaded streets. Residentially, the city spread toward the north and



BUFFALO TRAFFIC CONDITIONS AND CARS. Lafayette Square, looking west on Court Street, near the focal point of traffic. Other is Main Street. Building on left street corner, International Railway interurban ticket office. Lockport and Niagara Falls interurban trains come south on Main Street, loop west through Court Street and turn north on Delaware Avenue

east more than to the south, because of the many railroads and industrial plants in that section, and assumed generally a form like an opened fan covering 42 square miles, with the business section as the handle. There are many beautiful parks, with a total of 1030 acres, connected, where possible, by a well-planned system of boulevards. The largest of these is Delaware Park, in the northern part of the city, where the

Pan-American Exposition was held in 1901. Thousands of strangers visit Buffalo every year in conjunction with their visits to Niagara Falls.

The map on page 3 shows clearly the general scheme of the Buffalo street railway lines. From Shelton Square, in the heart of the city, lines radiate in every direction, except to the west, where is Lake Erie. The system is simply a natural result of the city's development and an effort to provide its growing districts with street railway facilities. In the horse-car days many small, independent companies provided a rather haphazard service, until the International Railway Company was formed to operate all the lines as a single system. Since that time the continually improving character of the service and equipment has reflected the general effort to provide the best for the city's interests, and this is shown par-



BUFFALO TRAFFIC CONDITIONS AND CARS. View north on Main Street from Terrace. At corner on the right, Exchange Street, with heavy traffic from Union Station, meets Main Street. N. Y. C. & H. R. R. tracks pass under the square through tunnel



BUFFALO TRAFFIC CONDITIONS AND CARS. Main, Genesee and Huron Streets, one of the busiest points on the system. Cars to north and northeast separate here

ticularly at the present time, when the older method of operating lines from a sort of central terminal is being gradually changed into a complete method of through-routing that will eventually cover every combination of existing lines that will conform to the plan.

As in many cities in this country, certain streets grew in importance, and as a result every car line was focused upon them, with the consequent congestion and slow movement that naturally affected the efficiency of the entire system. There was much interlacing of lines, hampering operation and producing immense volumes of traffic at some points, and a scattering at others not at all far distant. By a gradual process of elimination, several lines were removed from the most congested streets to nearby parallel streets, not only doing away, to a large extent, with the undesirable conges-

tion, but also increasing the capacity of the central terminal system. Smooth operation was further effected by two high-speed interurban lines which ran through two of the principal traffic streets—one to Niagara Falls, the other to Lockport, N.Y.—both operated by the International Railway. Complications were occasioned by the fact that, in going from one part of Buffalo to another, the route invariably led through the congested business area, bringing many passengers into that region who should, logically, have reached their destinations by more direct routes. One of the first steps to relieve this situation was the inauguration of a through-route from a point near Buffalo Creek, in the southern part of the city, that practically describes an arc of a circle through the eastern and northern sections, to its terminal at Black Rock. Several other through-routes have also been established, and it is the aim of the International Railway Company to continue the through-routing policy, so that no line will terminate at the center of the city, but run directly across, passing through the center *en route*. The resultant simplified operation and the greater carrying capacity of the lines becomes at once apparent with the removal of the usual terminal delays from the congested center to the remote, light-traffic points at the terminals.

The International Railway Company operates 376½ miles,



BUFFALO TRAFFIC CONDITIONS AND CARS. Near-Side car, standard city car of International Railway. Same as standard cars of Chicago City Railway and Philadelphia Rapid Transit. Brill semi-convertible window system; steel bottom-frame; Brill No. 39-E trucks



BUFFALO TRAFFIC CONDITIONS AND CARS. Near-Side car. Circular seat at rear, 5; transverse seats, 32 longitudinal seat at left, 10; longitudinal seat at right, 7; total, 54

4 ft. 8½-in. gage, including the interurbans, the city lines in Buffalo, Niagara Falls, Lockport and Olcott Beach, and the scenic interurban lines in Canada along the Niagara Gorge. In Buffalo, alone, the mileage is 242, reduced to single-track basis, of which 91.50 miles are double track, 39 miles single and 20 miles in car houses, sidings and crossovers; radius of shortest curve, 32½ ft. The steepest grades, which are met only on the approaches to the long viaducts over the freight yards, are 4 per cent and from 400 to 700 ft. in length. Much of this mileage is, of course, in the business section and normally 280 cars are required for the service; but during the "rush hours," from 6 to 9 A.M., with the peak on the east side from 6 to 7 and on the west from 7 to 8—and in the evening from 5 to 6.30, with the peak at 6 o'clock—560 cars are in use. In cases of abnormally heavy traffic, additional cars, bringing the total to 600, are available, but it is rarely necessary to operate so many. During the hours of heaviest

traffic, the point of greatest congestion is the crossing of Main and Seneca Streets, where the cars of two double-track lines pass at the rate of 196 per hour, or at intervals of $18\frac{2}{3}$ seconds between cars. Another very heavy traffic and transfer point is that at Shelton Square, shown in the engraving on the front cover. The entire Main Street traffic passes this point; cars turn from Main Street into North Division Street at Ellicott Square—the large building on the right in which are the offices of the International Railway Company—and the loop in the foreground is used by another line running along Niagara Street toward the northwest. All the energy for the operation of the system is obtained from the enormous hydro-electric plants at Niagara Falls and a steam auxiliary at Buffalo.

Up to within the last year and a half there were several types of both single- and double-truck cars in use, but large prepayment cars, built by the G. C. Kuhlman Car Company and mounted on Brill No. 27-F pivotal trucks, were standard on the system. September 17, 1911, 35 Near-Side cars, such as those now used by the Philadelphia Rapid Transit Co. and the Chicago City Railway Co., were placed in service on the Grant Street line, and on October 15 of that year 26 additional cars of the same type were put on the Clinton Street line and subjected to thorough comparative tests with the former cars. The cars were built by The J. G. Brill Company. During these tests, in which the cars were operated in revenue service, they established a loading and unloading efficiency from 15 to 20 per cent. higher than the former cars and made phenomenal record for safety. Their success is best evidenced by their adoption as the standard city car of the system and the placing of an order for 100 Near-Side cars with the G. C. Kuhlman Car Company—delivery of which is about to be completed—and by an order for 100 similar cars to be built by The J. G. Brill Company for delivery during the present winter. The 161 Near-Side cars now in operation are running

mainly on the heaviest traffic lines, and when those now on order are delivered there will be sufficient Near-Side cars in service to take care of the daily traffic requirements, except during the "rush-hour" periods. The new cars are mounted on Brill No. 39-E single-motor trucks, have steel underframes and the Brill semi-convertible window system. Detailed descriptions of their constructive and operative features appeared in BRILL MAGAZINE for June, 1911, and May and December, 1912. For construction purposes the company uses two motor cranes, 10 motor and trailer flat and 54 dump cars.



NOVEL PREPAYMENT CARS FOR MUSKOGEE, OKLAHOMA

THE Muskogee Electric Traction Company, Muskogee Oklahoma, recently received from the American Car Company 10 prepayment cars that embody several interesting departures from usual electric car design.

In 1900 Muskogee had a population of 4250, and in 1904 it had grown sufficiently to warrant the establishment of the street railway system; in 1912 there were 35,000 inhabitants. Ordinary single-truck open-platform cars gave the initial service, and later, single-truck prepayment cars, with open platforms, arranged for one-man operation, were placed on the lines. Their success led to the later adoption of single-truck prepayment cars of a more radical design, that were remarkable for their extremely light weight. Detailed descriptions of these cars were published in BRILL MAGAZINE for April, 1910, and December, 1911.

The 10 cars recently placed are mounted on Brill No. 62-E single-motor trucks. An extremely light weight for so large a car—45 feet over the bumpers—was secured through the use